

REMARKS

103 Rejections of Independent Claims – Improper Motivation

The Examiner rejects claims 1 – 13, 15 – 18, 20, 21, 24 – 31, 33, 35 – 43, 45 – 47, 49, 50, and 53 – 56 under 35 U.S.C. §103 as unpatentable over Applicants' admitted prior art in view of U.S. Patent No. 7,072,093 to Trikha et al., herein referred to as Trikha.

When patentability turns on the question of obviousness, the search for and analysis of the prior art must include evidence relevant to whether there is a teaching, motivation or suggestion to select and combine the references relied upon. See, e.g., *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52 (Fed. Cir. 2001) (the central question is whether there is reason to combine the references, a question of fact drawing on the Graham factors). The mere fact that prior art can be modified to form a claimed invention does not make that modification obvious absent a showing that the prior art suggested the desirability of the modification. *In re Laskowski*, 871 F.2d 115, 117 (Fed. Cir. 1989); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984).

In support of his rejection of independent claim 1, the Examiner asserts that Applicants' admitted prior art teaches a multiple antenna system with first and second antennas simultaneously operatively connected to first and second signal circuits, respectively. While the Examiner concedes that Applicants' admitted prior art does not disclose a first parallel tuning circuit selectively connectable in parallel with the first parallel tuning circuit to selectively adjust the impedance of the first antenna, the Examiner asserts that it would be obvious to one of ordinary skill in the art to use the parallel tuning circuits of Trikha in the multiple antenna system of Applicants' admitted

art to adjust the impedance of the first antenna. However, contrary to the Examiner's assertions, there is no motivation to combine Applicants' admitted prior art with Trikha.

As discussed in the previous response, Trikha selects either an external car antenna or an internal hand-held antenna in an "exclusive or" type selection. Trikha's impedance matching circuitry is only used to match the impedance of the signal circuits to a selected antenna. Thus, Trikha at most teaches that impedance matching circuits may be inserted in parallel *when selecting between two different (and widely spaced) antennas* so as to use one or the other, but not both.

Applicants' admitted prior art, on the other hand, includes first and second series circuits disposed between the first and second antennas and signal circuits, respectively (see Figure 1). Importantly, there is a one-to-one correlation and connection between the relevant series circuits and the relevant antennas. Given this one-to one relationship, there simply is no need to have different impedances coupled to the antennas. Therefore, each series circuit is designed to have a fixed impedance that matches the impedance of the corresponding antenna. Because the impedance associated with the series circuits is fixed, there simply is no suggestion or motivation to look to Trikha for the selective impedance matching approach taught by Trikha, because selective impedance matching is not an issue in the admitted prior art. Thus, whatever Trikha may teach, it simply does not provide any motivation to alter the fixed impedance system of Applicants' admitted prior art; nor does the fixed impedance system of Applicants' admitted prior art provide any motivation to look to the selective impedance matching approach of Trikha.

In view of the above, it is apparent that neither Trikha nor Applicants' admitted prior art provide any motivation to modify Applicants' admitted prior art in the fashion taught by Trikha. Nor does the Examiner provide any other source for a proper motivation to combine. The Examiner states that it would have been obvious to combine "in order to provide a portable transceiver for operating in two frequency bands." However, Applicants' admitted prior art devices already provide (in some embodiments) portable transceivers for operating in two frequency bands. As such, the "reason" proffered by the Examiner to combine is already fully met by Applicants' admitted art devices. If the need is already fully met, there is simply no motivation to look elsewhere. Accordingly, Applicants submit that the Examiner has failed to set forth a legally sufficient motivation to combine, and the resulting rejections are therefore improper. Applicants therefore submit that independent claim 1, and its dependent claims, define patentable subject matter over the cited art.

Further, as clearly stated on page 2 of the current office action, the Examiner rejects independent claims 26, 39, and 56 using the same logic used to reject independent claim 1. Further still, the Examiner uses similar logic to reject independent claim 33 (see page 7 and 8 of the current office action). Therefore, for the same reasons discussed above, the rejections of claims 26, 33, 39, and 56 are improper and must be withdrawn. For at least these reasons, independent claims 1, 26, 33, 39, and 56 are allowable over the cited art.

103 Rejections of Independent Claims – Combination ≠ Claimed Invention

In addition, each of claims 26, 33, 39, and 56 include the limitation of controlling electromagnetic coupling between the first and second antennas. Specifically, claim 26

claims "a first switch selectively connecting the first impedance matching circuit with a transmission line connecting the first antenna to the first signal circuit to control electromagnetic coupling between the first and second antennas." Claim 33 claims "selectively connecting a first parallel impedance circuit in parallel with the first signal path if the first signal source is inactive and the second signal source is active to reduce electromagnetic coupling between the second and first antennas." Claim 39 claims "a first parallel tuning circuit selectively connectable in parallel with the first signal path, wherein the first parallel tuning circuit increases the electromagnetic isolation between the first and second antennas." Claim 56 claims "selectively connecting a first parallel impedance matching circuit in parallel with the first signal path if the first signal source is inactive and the second signal source is active to reduce electromagnetic coupling between the second and first antennas."

Neither Applicants' admitted art nor Trikha provide any evidence that a first parallel tuning circuit connected in parallel with the first signal path will control the electromagnetic coupling between the first and second antennas. Further, the Examiner does not offer any evidence that it does. In fact, the Examiner does not address the electromagnetic control limitation at all. As a result, the rejection is improper and the rejection of claims 26, 33, 39, and 56 must be withdrawn.

Applicants also note that claims 33 and 56 both include the limitations of (a) detecting whether the first signal source connected to the first antenna via the first signal path is active or inactive and (b) detecting whether the second signal source connected to the second antenna via the second signal path is active or inactive. The Examiner completely ignores these limitations in rejecting claim 56. However, the

Examiner does address these limitations in rejecting claim 33 (see page 7 of the current office action). Therefore, the following discussion will address the Examiner's comments as they relate to claim 33 and as they could relate to claim 56.

The Examiner asserts that page 1, line 22 through page 2, line 3 of the instant application teaches the detecting steps of claim 33. However, the cited section simply teaches "multiple antenna isolation can be achieved by placing a circuit in series between the radio transmitter and its antenna" (page 1, lines 22 – 23). The remainder of the cited section describes examples of series circuits. There is nothing in the cited section to teach or suggest actually detecting whether or not the first and/or second signal circuits are active. Therefore, contrary to the Examiner's assertions, there is nothing in Applicants' admitted art to teach or suggest the detecting steps of claim 33 or claim 56.

Further, the Examiner asserts that Figure 4B of Trikha teaches selectively connecting a first parallel impedance circuit in parallel with the first signal path based on the active or inactive states of the first and second signal sources. However, Figure 4B simply shows the first and second signal sources (124, 126) connected to a car antenna. There is nothing in Figure 4B that discloses or even suggests selectively making the connection based on the active or inactive state of the signal sources. A careful review of Trikha shows that, at best, Trikha teaches using a car adapter to automatically configure the switches when the car adapter is used to connect the wireless communication device to the car (see column 3, lines 14 – 48). There is nothing in Figure 4B or in the remainder of Trikha to teach or suggest that this connection is based on the particular operating state of either of the signal circuits.

Therefore, contrary to the Examiner's assertions, Trikha does not teach selectively connecting a first parallel impedance circuit in parallel with the first signal path based on the active or inactive states of the first and second signal sources.

In light of the above arguments, it is clear that neither Applicants' admitted art nor Trikha teach or suggest each and every element of claims 33 and 56. Therefore, claims 33 and 56 are allowable. Applicants respectfully request reconsideration.

For at least the reasons discussed above, independent claims 1, 26, 33, 39, and 56 define patentable subject matter over the cited art. Further, because dependent claims 2 – 25, 27 – 32, 34 – 35, and 40 – 55 depend either directly or indirectly from the independent claims, the §103 rejections of the dependent claims are rendered moot. Therefore, for at least the reasons discussed above, Applicants request the Examiner reconsider the rejections and allow claims 1 – 56.

§103 Rejections of Dependent Claims

Applicants also submit that claims 10, 12, 16, 32, 34, 35, 41, 43, and 46 are patentably distinct, even if their corresponding independent claims are not.

Claims 16 and 46 each claim that the second parallel tuning circuit increases the electromagnetic isolation between the first and second antennas, while claims 10 and 41 each claim that the first parallel tuning circuit increases the electromagnetic isolation between the first and second antennas in multiple frequency bands. Similar to the arguments presented above regarding independent claims 26, 33, 39, and 56, neither Applicants' admitted art nor Trikha provide any evidence that a parallel tuning circuit connected in parallel with a signal path between an antenna and a signal circuit will control the electromagnetic coupling between the first and second antennas. Instead of

providing explicit support for his assertion, the Examiner simply states that the combination of Applicants' admitted art with Trikha teaches the claimed limitations and cites Figures 1 to 4 of Trikha in support of his assertions. However, Figures 1 – 4 of Trikha simply show different operating modes for the described wireless system, where the operating mode is dependent on the selected antenna. As such, there is nothing in Figures 1 to 4 of Trikha or in any of Applicants' prior art that teaches using the parallel tuning circuits to increase the electromagnetic isolation between the first and second antennas, much less to increase the electromagnetic isolation between the antennas in multiple frequency bands. Because neither Applicants' admitted art nor Trikha teach or suggest the limitations of claims 10, 16, 41, and 46, the rejection of claims 10, 16, 41, and 46 must be withdrawn.

Claims 32 and 34 both claim adjusting the impedance of the first parallel impedance circuit based on external interference. As described on page 8, lines 10 – 19 of the instant application, the external interference comprises interference caused by an object near the antenna that detunes the antenna. The Examiner rejects claims 32 and 34, relying primarily on Applicants' admitted art and Trikha, and relying on Michaels solely for the proposition that Michaels teaches "antenna impedance adjustment [] based on external interference." Contrary to the external interference of claims 32 and 34, Michaels describes rejecting interfering narrow band received signals using a specific interference rejection filter (2) independent of any impedance matching (see the Summary and column 4, line 45 through column 5, line 11). Because the instant invention is directed to a different type of interference than Michaels, the instant invention is solving a different problem than Michaels. Further, the instant application

"reuses" the impedance circuit to address the external interference problem, as opposed to using the separate filter circuitry of Michaels. Therefore, because Michaels uses different equipment to solve a different interference problem than the instant invention, the combination of Applicants' admitted art, Trikha, and Michaels does not disclose the invention claimed in claims 32 or 34. Applicants respectfully request reconsideration.

Lastly, claim 35 claims, *inter alia*, "detecting whether a third signal source connected with a third antenna via a third signal path is active or inactive." As discussed above with regard to claims 33 and 56, there is nothing in Applicants' admitted art or Trikha to teach or suggest actually detecting whether or not a signal circuit is active. Therefore, there is nothing in Applicants' admitted art or in Trikha to teach or suggest the detecting step of claim 35. As such, Applicants respectfully request reconsideration.

Summary

The Examiner should note that MPEP §706.05 requires that "the Examiner never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal." Accordingly, if the claims remain rejected, the Examiner is specifically requested to clarify the following issues for purposes of appeal by directly answering the following questions and/or directly addressing the following comments:

1. Does the Examiner contend that Applicants' admitted art, Trikha, or the knowledge of one skilled in the art provide the requisite motivation to combine the two references? If so, Applicants request that the Examiner identify and

- discuss, in detail, the alleged motivation and include citations to specific passages.
2. Does the Examiner contend that the parallel tuning circuits of Trikha will control the electromagnetic coupling between multiple antennas? If so, Applicants request the Examiner to specifically identify how Trikha provides such electromagnetic isolation.
 3. The Examiner contends that Applicants' admitted prior art teaches detecting the active or inactive state of the signal circuits. Applicants request the Examiner specifically identify where Applicants' admitted art allegedly discloses this detection process.

In view of the above remarks, Applicants submit that claims 1 – 56 are patentably distinct from the cited art. Therefore, Applicants respectfully request the Examiner reconsider the rejections and permit the application to move forward to allowance. If any issues remain unresolved, Applicants request the Examiner contact the undersigned so that any such issues may be expeditiously resolved.

Respectfully submitted,

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